The project has generated international interest as well, and many countries, including Thailand, Indonesia, Russia, Mexico, Dominican Republic, South Africa and Brazil, have shown interest in collaborating with the KIDROP team and adopting the model.

Conclusion

The KIDROP project has proven to be a financially viable ophthalmic care service provided across several districts in the state of Karnataka, especially in its remote underserved areas. Observing the success of this innovative ophthalmologic project in reaching out to the rural masses, many other states and countries have started collaborating with the KIDROP team to replicate the model and serve their citizens.

FOREVER programme to screen babies' eyes

Under the existing initiative, Narayana Nethralaya has launched another comprehensive programme – FOREVER – to focus on ROP, eye care, vision and eye cancer, including rehabilitation. The programme provides universal screening to all babies for one year after birth through the government healthcare system. It is implemented in collaboration with the State government and complements the government-sponsored Rashtriya Bal Swasthya Karyakram (RBSK), a national programme for child welfare. Both the programmes will be expanded all over the country to reduce the incidence of infant blindness.

Fact Sheet

Theme	Health
Nodal Implementing Agency	Narayana Nethralaya, Bengaluru, in partnership with the Government of Karnataka
Geographical Coverage	19 districts of Karnataka State
Target Groups	Infants and premature babies
Years of Implementation	2009 - Present (Initiated without government support in 2008)

2.24 Mo Masari: Using insecticidal nets to protect pregnant women and children from malaria in Odisha

Mo Masari is a successful malaria prevention initiative implemented by the Government of Odisha to protect pregnant women and children in malaria endemic districts of Odisha. The scheme focusses on ensuring efficient distribution and proper use of Long-Lasting Insecticidal Nets (LLINs) by the targeted population. The accompanying rigorous Information, Education and Communication (IEC) and Behaviour Change Communication (BCC) campaigns, run by the Department of Health and Family Welfare and National Vector Borne Disease Control Programme (NVBDCP), Odisha, has been the crucial element that brought this simple malaria prevention strategy to fruition. 89% of the women receiving LLINs reported using it during pregnancy and up to 99.5% pregnant women retained the LLINs with them.

Rationale

Malaria is a rampant health concern in Odisha. Odisha has been a high endemic state and has had a higher Annual Parisitic Incidence (API) of 9.3 compared to the rest of India.[1] Despite being home to only 3.5% of India's population, in 2010 the state accounted for 20% of malaria cases, 33% of falciparum malaria (a more dangerous type of the disease) cases and 25% of all malaria deaths reported in the country. Aiming to check the high incidence of, mass distribution of LLINs was undertaken as part of the National Rural Health Mission (NRHM) under the aegis of Government of India (GoI). Seventeen clusters across 26 high-endemic districts of Odisha were identified and approximately 19 lakh LLINs were distributed in 2009–2010 itself.

A point of focus has been controlling malaria incidence in pregnant women, who are particularly vulnerable because pregnancy significantly reduces a woman's immunity to malaria. Prior to 2008, the National Drug Policy on Malaria had recommended chloroquine tablets for pregnant women, but due to the subsequent resistance of falciparum malaria to chloroquine, its use was stopped

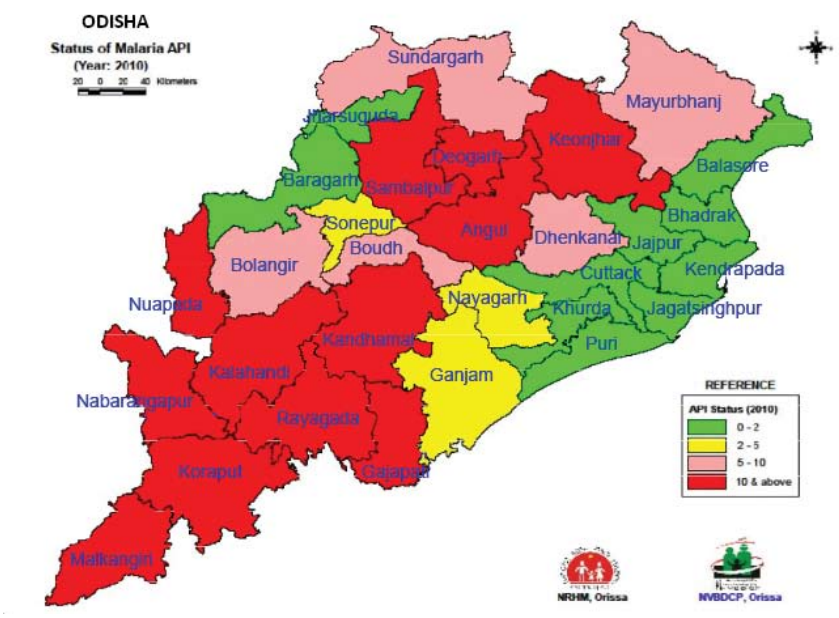


Image 1: Malaria annual parasitic incidence in Odisha in 2010

Source: "Evaluation of Use of LLIN by Pregnant Women under Mo Masari Initiative and Effectiveness of BCC Messages on Malaria". 2012. TMST and DoH&FW, Government of Odisha.

Malaria interventions in Odisha

- Mo Masari: Promoting use of LLINs by pregnant women and children (under Government of Odisha)
- LLINs distributed through Gaon Kalyan Samitis (GKS) using the cluster approach (under Government of India)
- Promoting use of insecticide-treated mosquito nets (ITMNs)
- Early diagnosis and complete treatment (EDCT) through establishment of fever treatment depots (FTDs) and sentinel surveillance
- Indoor residual spray (IRS)
- Anti-larval measures, including source reduction measures

[1] *API refers to number of malaria positive cases (microscopically positive + RDT positive cases) detected during a year per total population; As of 2002, India had brought it down to less than 2. Technical and Management Support Team (TMST) on behalf of Department of Health & Family Welfare, Govt. of Odisha. 'Evaluation of Use of LLIN by Pregnant Women under Mo Mashari Initiative and Effectiveness of BCC Messages on Malaria'. March 2012.*

across the country. Seeking an alternative to aggressively combat malaria in pregnant women, the Government of Odisha designed a parallel, targeted strategy – called the Mo Masari scheme – to build on the mass distribution of LLINs by GoI. Introduced by the state NVBDCP in November 2009, Mo Masari identified pregnant women, children up to five years of age and students in tribal residential schools as the key beneficiaries for receiving the free LLINs.

Objectives

Mo Masari's main objectives are to prevent the occurrence of malaria among pregnant women and children and to reduce the API in high-endemic areas of Odisha.

Key Stakeholders

The key stakeholders of the scheme are at three levels – the Department of Health and Family Welfare, NVBDCP - Odisha, and Technical and Management Support Team (TMST) at the State level; Chief District Medical Officer, District Malaria Officer, Assistant District Malaria Officer, Vector Borne Diseases Consultant at the district level; Malaria Technical Supervisor, Community Health Centre (CHC) medical officer at the block level; Accredited Social Health Activists (ASHAs), Anganwadi Workers (AWWs), one male health worker and one female health worker, Multi Purpose Health Supervisor at the sub-centre level; and beneficiaries including pregnant women and their children in tribal residential schools and in orphanages.

Figure 1: Key stakeholders of the Mo Masari scheme

State
- Department of Health & Family Welfare
- National Vector Borne Disease Control Programme (NVBDCP), Odisha
- Technical and Management Support Team (TMST)

District
- Chief District Medical Officer (CDMO), District Malaria Officer (DMO), Assistant DMO, Vector Borne Diseases Consultant

Block
- Malaria Technical Supervisor, CHC Medical Officer

Sub-centre
- ASHA, AWW, one male health worker and one female health worker, Multi Purpose Health Supervisor

Beneficiaries
- Pregnant women and their children
- Children in tribal residential schools
- Children in orphanages

Implementation strategy

The Mo Masari scheme was piloted in January 2010 in five districts of Keonjhar, Kandhamal, Rayagada, Malkangiri and Nabarangpur. The strategy focussed on two main beneficiary groups: (i) pregnant women and their children up to five years of age and (ii) children studying in tribal residential schools. There was delay in

Image 2: Mo Masari nets for distribution on Village Health and Nutrition Day (03.02.2014) in Kandhamal district

Image 3: An ASHA worker gets instructions on using the LLIN

extending the scheme to tribal schools and distribution was undertaken in 2011–2012. In the pilot phase 1,01,350 nets were distributed to pregnant women and 2,54,356 to tribal schools.

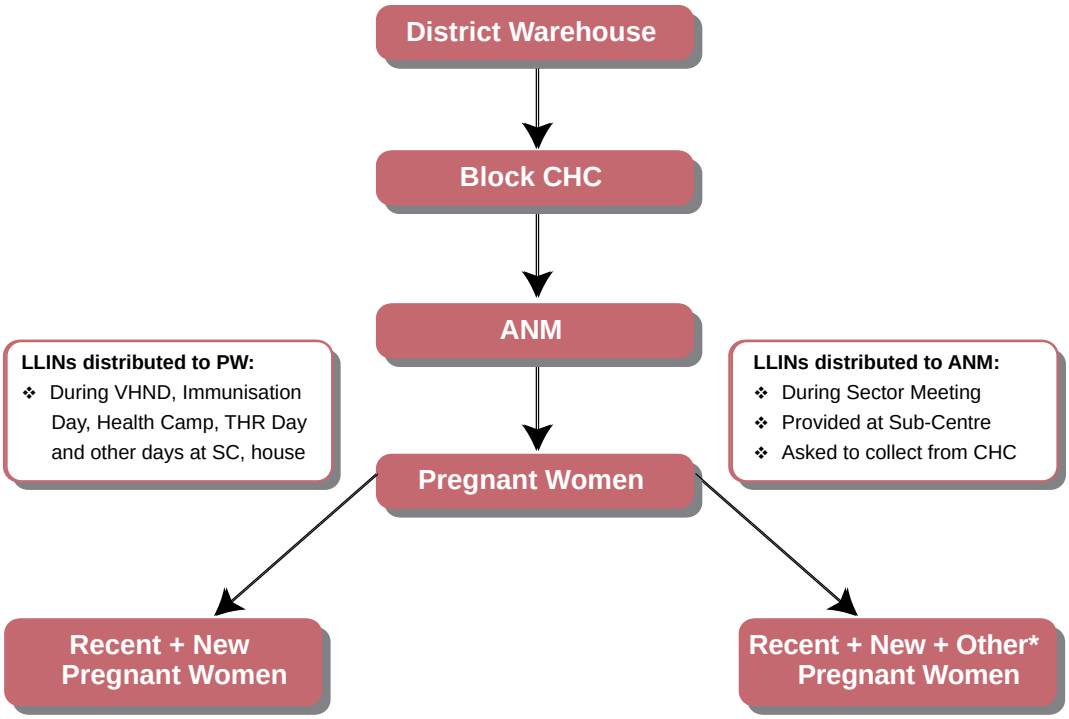
After a successful pilot, the scheme was scaled up to cover seven districts in the state. As of 2013, Mo Masari covered 12 districts - Keonjhar, Kandhamal, Rayagada, Malkangiri, Nabarangpur, Deogarh, Sambalpur, Angul, Nuapada, Koraput, Kalahandi and Gajapati. The selection of districts was based on the high rate of API. Since 2013, the scheme has been expanded to cover a third set of beneficiaries – children in orphanages (including government and non-government run orphanages).

Under the scheme, pregnant women receive family-sized LLINs, in which the mother, the new-born child and at least one other child can sleep. The nets distributed to pregnant women are generally blue in colour so that families can easily distinguish these from the household's other LLINs, which are milk white in colour. The residents at tribal schools and orphanages receive individual-sized nets.

Unlike for the general cluster approach programme, where the nets are procured from the GoI, for the Mo Masari scheme the Government of Odisha's State Drug Management Unit (Department of Health and Family Welfare) procures nets through a public-private partnership scheme, comprising a consortium of three

Image 4: Pamphlets and posters used to promote Mo Masari

Figure 2: Process flow for LLIN distribution to pregnant women



Source: Technical and Management Support Team on behalf of Department of Health & Family Welfare, Govt. of Odisha

**Other pregnant women are those pregnant women who come for delivery to their paternal houses, if not received LLIN at their in law's house. In such cases, GKS members accordingly instruct ASHA, AWW, MPW(F).*

private vendors, at a cost of Rs. 217 per net for the nets for pregnant women.

The process flow for net distribution varies depending on the beneficiary type. The first point of distribution for pregnant women is at the local sub-centre, where nets are given during Antenatal Care (ANC) check-up. Around 50% of the beneficiaries are given LLINs through sub-centres. The remaining beneficiaries are covered during Village Health and Nutrition Days (VHNDs), polio immunisation days, at health camps or through door-to-door distribution by Auxiliary Nurse Midwife (ANM) or ASHAs.

In the case of tribal residential schools and orphanages, the implementation is done in convergence with the Scheduled Tribes (STs) and Scheduled Castes (SCs) Development Department, Government of Odisha, since they have data on the list of schools and beneficiaries across the state and also have ground-level officials who can coordinate the distribution. The procurement is carried out in the same manner as other LLINs, and the District Malaria Officer coordinates with the District Welfare Officer and the school headmaster or orphanage officials to ensure that the LLINs reach beneficiaries.

Image 5: (Top) Nidhi Ratha and (above) Street play by locals

Source: Report - 'Evaluation of Use of LLIN by Pregnant Women under Mo Masari Initiative and Effectiveness of BCC Messages on Malaria'. 2012. TMST and DoH&FW, Odisha

The robust IEC and BCC campaigns launched during Mo Masari implementation to promote the use of LLINs and their maintenance played perhaps the most important role in making the scheme a success. A three-tier model was followed for the campaigns in the each phase of LLIN distribution. During the pre-distribution phase, district officials, such as the NVBDCP consultant, trained ASHAs and ANMs on the proper usage of the nets. ASHAs and ANMs, in turn, gave demonstrations to the beneficiaries on how the LLIN should be handled, washed and dried. A pre-publicity campaign was organised to generate demand for LLINs. In the distribution phase, demonstrations were given on using and caring for the nets, and handmade posters and pamphlets were distributed to promote the use of LLINs. A small leaflet was also passed on with each net to ensure that the nets are properly used and last their lifecycle of three to five years. The campaign *'Nidhi Mousa to Masari Ne'* was launched to promote behavioural change among beneficiaries by reiterating the message on malaria prevention and usage of LLINs. The campaigns focussed on the highly successful character created for the LLIN programme – Nidhi Mousa (Uncle Nidhi). A van campaign (using a chariot called Nidhi Ratha) and folk theatre were also used to promote the message. In tribal areas, traditional methods of dissemination, such as drum beating, as well as Interpersonal Communication (IPC) were used to reach the masses. Teachers and students at tribal schools were sensitised during assembly sessions. A comic booklet in Odiya was also prepared specifically for children. Awareness generation on malaria has also been integrated with NRHM's school health programme to ensure better reach. For the post-distribution phase, a discussion platform, called Nidhi Mousa Adalat, was conceived to be held every three months. Also, in every village, a Swastha Kantho (health wall) has been mandated to provide updated details of key contact persons like ASHAs and the dates of VHND or immunisation days. A grievance helpline has also been put in place to address queries from beneficiaries.

Resources Utilised

Odisha had multiple malaria interventions in operation across the state prior to the introduction of Mo Masari. The same officials engaged with those interventions, from the NVBDCP functionaries at the state level to the District Malaria Officer to the ASHA at the village level, are involved in implementation of the Mo Masari scheme. Hence, Mo Masari was easily integrated into the existing operational framework.

From 2009-2011, the Department for International Development (DFID), United Kingdom, funded malaria intervention schemes under the Odisha State Health

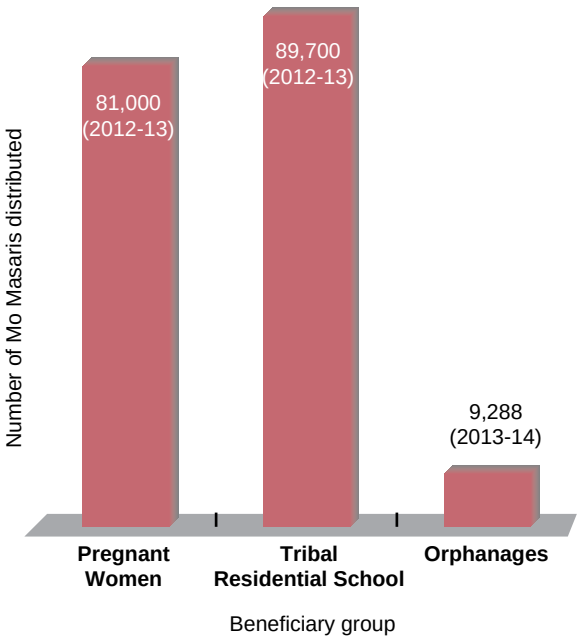
Plan (OSHP) budget. Widespread and robust IEC/BCC campaigns which were also deployed for awareness generation were also funded by OSHP. After this period, the Government of Odisha has been providing complete funding for the scheme.

Impact

Wide coverage: In terms of coverage, almost 84% women received LLINs during the distribution phase, and 89% reported sleeping under LLINs during pregnancy. About 43% and 42% women received LLINs during second and third trimester, respectively. Only 9% pregnant women were covered during the first trimester, due to factors such as late registration and lack of ANC services. Also, ANMs hesistated to distribute LLINs that are specifically meant for pregnant women, to women who are in the first trimester of their pregnancy because some women opted to terminate their pregnancies in their first trimester, striking down the purpose of LLIN distribution to this population segment.

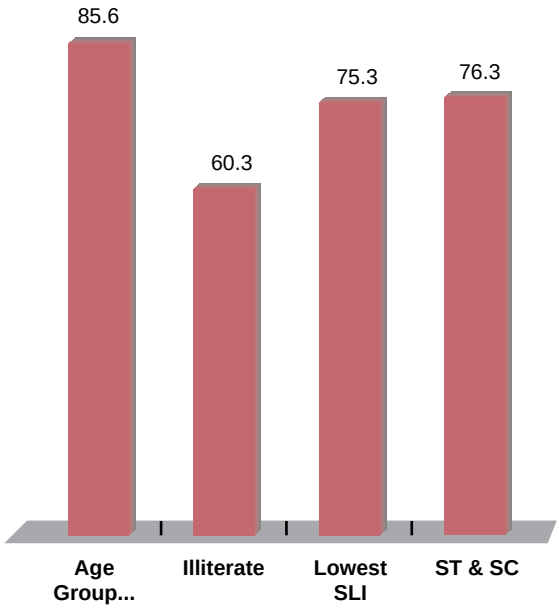
Higher utilisation: Following the distribution, up to 99.5% pregnant women had retained the LLINs with them. Compared to cluster approach areas, Mo Masari-only areas demonstrated higher utilisation of LLINs, possibly because individual attention was given to pregnant women through IPC[2]. The communication campaigns that accompanied Mo Masari were important contributors to high utilisation. The effectiveness of the initiative's IEC/BCC/IPC strategy is illustrated in *Figure 5*.

Figure 3: Coverage of Mo Masari (number of nets distributed)



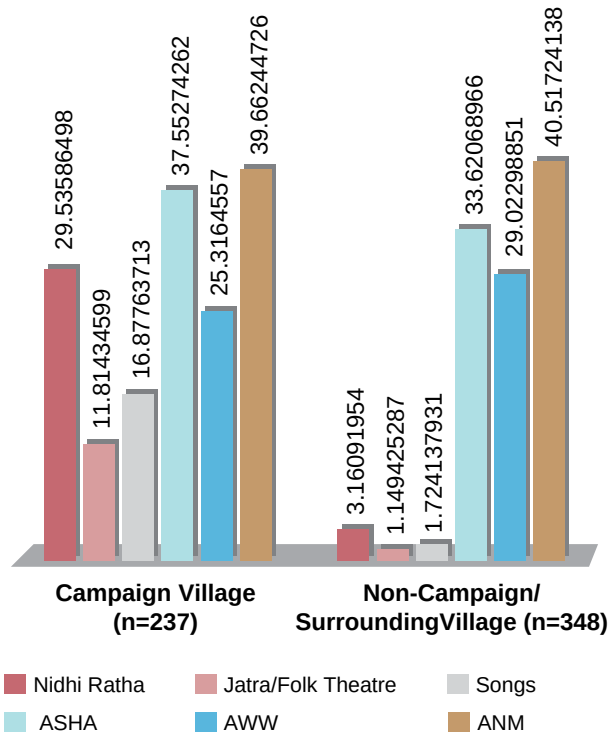
Source: Technical and Management Support Team on behalf of Department of Health & Family Welfare, Govt. of Odisha

Figure 4: Socio-economic characteristics of pregnant women in Mo Masari areas (in %)



Source: Technical and Management Support Team on behalf of Department of Health & Family Welfare, Govt. of Odisha

Figure 5: Source of Information of households about Do`s for the use of LLIN (in %)



Source: Technical and Management Support Team on behalf of Department of Health & Family Welfare, Govt. of Odisha

[2] *Technical and Management Support Team (TMST) on behalf of Department of Health & Family Welfare, Govt. of Odisha. 'Evaluation of Use of LLIN By Pregnant Women under Mo Masari Initiative and Effectiveness of BCC Messages on Malaria'. March 2012.*

Key Challenges

The scheme faced some initial resistance from a section of the population that was wary of the use of mosquito nets due to various myths or misconceptions. Attempts were made to overcome this resistance through effective IEC/BCC campaigns and consistent IPC by ASHAs, who distribute LLINs as part of the cluster approach programme.

Difficulties also arose from improper use of LLINs. The average life of the net is about three to five years but improper use of the net, such as washing it in hot water or using baking soda to clean it, reduces its efficacy. Sometimes the net, in its new packaging, was seen as a prized possession and stored for a long time instead of being used immediately. Secondly, in some cases, the cover of the nets was being used for other purposes like storing puffed rice, which could be harmful.

Logistical issues in procurement and supply at certain points also posed a challenge, making it difficult to adhere to stipulated time frames. In the initial stages, individual-sized LLINs for children in schools were difficult to procure, and hence, Insecticide-Treated Mosquito Nets (ITMNs) had to be distributed instead. The remoteness of tribal areas created problems of access, but these problems were overcome by hiring local people for distribution and using folk theatre or other traditional forms of art in campaigns instead of mobile vans.

Replicability and Sustainability

Mo Masari has complemented the cluster approach of the larger LLIN distribution programme. This has increased its sustainability quotient and tapped into the awareness about using LLINs to control malaria. The cluster approach, being implemented at the grassroots by the communities themselves, has helped in bringing about a behaviour change toward LLINs and in eliciting proactive support.

Image 6: Swastha Kantho at Nuagaon, Kandhamal District

Attempts at replication of such an initiative should consider the context in which Mo Masari has been implemented. In Odisha, there was an existing taskforce and executive committee that worked on malaria interventions and understood the scenario. Also, the units of intervention were clusters, defined by the incidence of malaria and not on the basis of geography or revenue. Also, a separate evaluation team was in place to efficiently assess and monitor implementation.

Conclusion

Odisha's primary objective of reducing the rate of API in the state is being successfully achieved through interventions like Mo Masari. The scheme has made major headway toward malaria control in the population segment most vulnerable to it. The need is to keep up the momentum of the scheme. Enthusiasm about the scheme is apparent in the words of implementing officials such as the Chief District Medical Officer of Mo Masari-covered Kandhamal district: "If these consistent efforts are kept up, in three years, the API can be brought down from 23 to 2, even in a high endemic district like Kandhamal."

Fact Sheet

Theme	Health
Nodal Implementing Agency	State Vector Borne Diseases Control Programme, Department of Health and Family Welfare, Government of Odisha
Geographical Coverage	12 districts of Odisha State
Target Groups	Pregnant women, children up to 5 years, students in tribal residential schools and children in orphanages
Years of Implementation	2010 - Present